MSE-Colloquium@NTU

10 August 2016, 4.00 pm
Lecture Theatre 7, Nanyang Technological University

Signal transduction on membrane surfaces: the roles of space, force, and time

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About the Talk

Most intracellular signal transduction reactions take place on the membrane surface. The membrane provides much more than just a surface environment on which signalling molecules are concentrated. There is a growing realization that multiple physical and chemical mechanisms allow the membrane to actively participate in the signalling reactions. Using a combination of single molecule imaging and spectroscopic techniques, my research seeks to directly resolve the actual mechanics of signalling reactions on membrane surfaces, both in reconstituted systems and in living cells. These observations are revealing new insights into cellular signalling processes as well as some unexpected functional behaviours of proteins on the membrane surface.

About the Speaker

Professor Jay T. Groves received his B.S. degree in Physics and Chemistry from Tufts University in 1992. He then went on to complete his Ph.D. in Biophysics with Professors Steven Boxer and Harden McConnell at Stanford University. He subsequently spent a year as a visiting scholar at Academia Sinica in Taipei, Taiwan, before becoming the Division Director's Fellow in the Physical Biosciences Division at Lawrence Berkeley National Laboratory. In 2001, he joined the Chemistry Department at UC Berkeley as an Assistant Professor. He was promoted to Associate Professor in 2007 and Professor in 2010. In 2008, Professor Groves was appointed as a Howard Hughes Medical Institute Investigator. He has received the Burroughs Wellcome Career Award in the Biomedical Sciences (2000), the Searle Scholars Award (2002), the MIT TR100 (2003), the Beckman Young Investigator Award (2004), and the NSF CAREER Award (2005). He has served as an Associate Editor of the Annual Reviews of Physical Chemistry since 2006.